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09/721,944	11/27/2000	Masahiko Kubo	040894-5606	4297

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EXAMINER	
CARTER, TIA A	
ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/721,944	KUBO, MASAHIKO	
	Examiner	Art Unit	
	Tia A Carter	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2,4.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the English translation must be entered in the specific locations identified by the drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogatsu et al. (US. 5719956) in view of Nakatsuka et al. (US. 4926254).

Regarding claim 1, Ogatsu et al. discloses a color image processing method for converting first color signals containing four or more variables including black to second

color signals containing four variables including to second black (fig. 1, col. 8, lines 10-16), said method comprising the steps of:

Obtaining device-independent color signals on color system color coordinates from said color signals (fig. 1, col. 8, lines 14-16),

Ogatsu et al. **do not disclose** determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals

Nakatsuka et al. **discloses** determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals (fig. 3, col. 5, lines 25-53);

Determining the remaining three variable color signals in said second color signals from the black color signal and the device-independent color signals in said second color signals so that colorimetric consistency of the three variable color signals may be obtained (fig. 1, col. 8, lines 14-27).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein a density adjustment and manipulation would be implemented to prevent overprinting of inks and to keep the mixed inks constant when outputting the color images to the output device.

Regarding claim 2, Ogatsu et al. discloses the color image processing method according to claim 1.

Ogatsu et al. **do not disclose** setting the color signals other than black in said second color signals to zero, in case the color signals other than black in said first color signals are zero

Nakatsuka et al. **discloses** setting the color signals other than black in said second color signals to zero, in case the color signals other than black in said first color signals are zero (fig. 7a, col. 7, lines 59-67).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein manipulation of the color signals will help to prevent over concentration of specific color components, specifically with the color component black preventing grayish and/ or darker color output.

Regarding claim 3, Ogatsu discloses the color image processing method according to claim 1, wherein the color signals other than black in said first color signals and in said second color signals are yellow, magenta and cyan (fig. 1, col. 8, lines 16-24).

Regarding claim 4, Ogatsu discloses the color image processing method according to claim 1, wherein the device-independent color signals on said color system color coordinates are L*a*b* color signals (fig. 8, col. 13, lines 19-25).

Regarding claim 5, Ogatsu et al. disclose the color image processing method according to claim 1, wherein

Ogatsu et al. **do not disclose** the step for determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals is configured by a look-up table

Nakatsuka **discloses** the step for determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals is configured by a look-up table (fig. 3, col. 7, lines 25-45).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein a density adjustment and manipulation would be implemented to prevent overprinting of inks and to keep the mixed inks constant when outputting the color images to the output device.

Regarding claim 6, Ogatsu disclose color image processing method according to claim 1, wherein

A function showing the relationship between said second color signals and the device-independent color signals on color system color coordinates is obtained in advanced via a step for determining the remaining three variable color signals in said second color signals from the black color signal and the device-dependent color signals in said second signals so that colorimetric consistency of the three variable color signals may be obtained (fig. 6, col. 11, lines 46-57), and

Said function is solved by using as an input the black color signal and the device-dependent color signals in said second signals, in order to determine the remaining

three variable color signals in said second color signals (fig. 6, col. 11, lines 57-67; col. 12, lines 1-9 and lines 58-62)

Regarding claim 7, Ogatsu et al. discloses a color image processor apparatus for converting first color signals containing four or more variables including black to second color signals containing four variables including to second black (fig. 1, col. 8, lines 10-16), said processor comprising:

Obtaining device-independent color signals on color system color coordinates from said color signals (fig. 1, col. 8, lines 14-16),

Ogatsu et al. **do not disclose** determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals

Nakatsuka et al. **discloses** determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals (fig. 3, col. 5, lines 25-53);

Determining the remaining three variable color signals in said second color signals from the black color signal and the device-independent color signals in said second color signals so that colorimetric consistency of the three variable color signals may be obtained (fig. 1, col. 8, lines 14-27).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein a density adjustment and manipulation would be

implemented to prevent overprinting of inks and to keep the mixed inks constant when outputting the color images to the output device.

Regarding claim 8, Ogatsu et al. discloses the color image processor apparatus according to claim 7.

Ogatsu et al. **do not disclose** setting the color signals other than black in said second color signals to zero, in case the color signals other than black in said first color signals are zero

Nakatsuka et al. **discloses** setting the color signals other than black in said second color signals to zero, in case the color signals other than black in said first color signals are zero (fig. 7a, col. 7, lines 59-67).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein manipulation of the color signals will help to prevent over concentration of specific color components, specifically with the color component black preventing grayish and/ or darker color output.

Regarding claim 9, Ogatsu discloses the color image processor apparatus according to claim 7, wherein the color signals other than black in said first color signals and in said second color signals are yellow, magenta and cyan (fig. 1, col. 8, lines 16-24).

Regarding claim 10, Ogatsu discloses the color image processor apparatus according to claim 7, wherein the device-independent color signals on said color system color coordinates are L*a*b* color signals (fig. 8, col. 13, lines 19-25).

Regarding claim 11, Ogatsu et al. disclose the color image processor apparatus according to claim 7.

Ogatsu et al. **do not disclose** the step for determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals is configured by a look-up table

Nakatsuka **discloses** the step for determining a black color signal in said second color signals having the identical or virtually identical density as the black color signal in said first color signals is configured by a look-up table (fig. 3, col. 7, lines 25-45).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein a density adjustment and manipulation would be implemented to prevent overprinting of inks and to keep the mixed inks constant when outputting the color images to the output device.

Regarding claim 12, Ogatsu disclose color image processor apparatus according to claim 7, wherein

A function showing the relationship between said second color signals and the device-independent color signals on color system color coordinates is obtained in advanced via a step for determining the remaining three variable color signals in said

second color signals from the black color signal and the device-dependent color signals in said second signals so that colorimetric consistency of the three variable color signals may be obtained (fig. 6, col. 11, lines 46-57), and

Said function is solved by using as an input the black color signal and the device-dependent color signals in said second signals, in order to determine the remaining three variable color signals in said second color signals (fig. 6, col. 11, lines 57-67; col. 12, lines 1-9 and lines 58-62).

Regarding claim 13, Ogatsu et al. discloses the color image processor, wherein

Each means of said color image processor according to claim 7 is configured by a 4- or -more -input 4-output color converter that inputs color signals containing four or more variables in said first color signals and outputs four variable color signals in said second signals (fig. 15, col. 2, lines 54-64).

Regarding claim 14, Ogatsu et al. disclsoes the color image processor according to claim 13, wherein

Said 4-or-more-input 4-output color converter is configured by a direct lookup table (fig. 15, col. 2, lines 54-67).

Regarding claim 15, Ogatsu et al. discloses the color image processor comprising:

Each means of the color image processor according to claim 7 is configured by

Ogatsu et al. **do not discloses** a 4-or-more-input 3-output color converter that inputs color signals containing four or more variables in said first color signals and outputs three variable color signals other than black out of the four variable color signals in said second color signals

Nakatsuka et al. **discloses** a 4-or-more-input 3-output color converter that inputs color signals containing four or more variables in said first color signals and outputs three variable color signals other than black out of the four variable color signals in said second color signals (see fig. 2, col. 4, lines 65-68);

A I-input 1-output color converter that inputs the black color signal in said first color signals and outputs the black color signal in said second color signals (fig. 1, col. 8, lines 22-28).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein a 4 input and 3-output converter is implemented to provide the output of three basics colors (CMY) without the influence of the black color.

Regarding claim 16, Ogatsu et al. discloses the image processor according to claim 15, wherein

Ogatsu et al. **do not disclose** said 4-or-more-input 3-output color converter is configured by a direct lookup table.

Nakatsuka et al. **disclose** said 4-or-more-input 3-output color converter is configured by a direct lookup table (see fig. 2, col. 4, lines 65-68), and

Said 1-input 1-output color converter is configured by a lookup table (fig. 1, col. 8, lines 22-25).

It would have been obvious to one skilled in the art at the time of the invention to modify Ogatsu et al. wherein a 4 input and 3-output converter is implemented to provide the output of three basics colors (CMY) without the influence of the black color.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kita et al. (US. 5636290), Kita et al. (US. 5331440) and Tabata et al. (US. 6499829) are cited to show related art with respect to color matching output with the addition/subtraction of black.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tia A Carter whose telephone number is 703 - 306-5433. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703-305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tia A Carter
Examiner
Art Unit 2626

TAC
June 22, 2004

MADELEINE NGUYEN
PATENT EXAMINER